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just because Japanese assemblers are going. The key is that they want to supply the U.S. Big Three, who have greater volume, are not as demanding as Japanese assemblers, and will not squeeze them on price," the study said.

"Of course they also want to supply the lucrative U.S. aftermarket. Roybi is an example of a non-auto parts firm in Japan which supplies die cast molds to GM and Ford in the U.S., but does not supply U.S.-based Japanese assemblers. In fact, it was one of the Big Three which first urged Roybi to produce in the U.S., and apparently such 'suggestions' from the Big Three are common."

The report went on to mention an unnamed medium-sized Japanese parts firm that was offered free land and guaranteed orders for five years if it would establish U.S. production facilities.

Japanese automakers such as Nissan, Toyota, Honda, Subaru, Isuzu, Mazda and Mitsubishi are on the MEMA list. So are Japanese component manufacturers such as Tokyo Seat Co., Asahi Glass Co., Yuasa Battery, Nippondenso, Showa Manufacturing Co., Nippon Light Metal and Bridgestone.

Thus far, 19 states have been selected by the Japanese and their U.S. partners for automotive manufacturing. The most popular location is Ohio, with 23 facilities either operating or planned. Kentucky is second with 16 Japanese manufacturers, followed by Michigan with 15.

Other states on the list include Illinois (12), Indiana (11), Tennessee (8), California (8), Texas (5), Pennsylvania (5), Georgia (4), Missouri (3), Alabama (3), Arkansas (2) and New York (2). States that have attracted one Japanese automotive investor include South Carolina, Florida, Virginia, Oregon and Nebraska.

Total employment by Japanese automotive manufacturing businesses in the United States is expected to total approximately 35,000 by 1990, according to MEMA.

According to the Commerce Department study, Japanese parts manufacturers are coming to the United States because of the appreciation of the Japanese yen, a stagnant Japanese market, increased offshore auto assembly, and the threat of local-content legislation. Other advantages of producing in the United States are lower materials costs and, in some cases, lower labor costs.

The internal study said that states with offices in Japan report "a flood of inquiries" from Japanese companies interested in U.S. investment.

"Of course, U.S. state and local governments continue to look for these inquiries. They hope for Japanese parts maker invest-

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Venture	Products	Location	No. of Employees	Ownership	Start-Up Date	Supplier to:
Ichikoh Ind.	lighting equipment	Shelbyville, Ky.		Ichikoh Ind.	1999	Toyota Motor Mfg.
Idemitsu Apollo Inc.	lubricants	Cincinnati		Idemitsu Apoilo	1984	Nissan Motor Mfg.
I.I. Stanley Co. Inc.	lighting equipment electronic components	Battle Creek, Mich.		Stanley Electric Co. Ltd. (60%) Kyokuto Boeki Kaisha Ltd. (30%) Stanley Electric U.S. Co. (10%)	1988	American Honda Diamond-Star Toyota Motor Mfg.
I/N Tek	cold-rolled steel sheet	South Bend-New Carlisle, Ind.		Inland Steel Corp. (60%) Nippon Steel (40%)	1990	Nissan Motor Mfg.
Inouac (USA) Inc.	exterior trim foam rubber padding	Bardstown, Ky.		Inoue MTP	1988	
Isuzu Truck of America	bus chassis		30	Isuzu Motors (80%) C. Itoh & Co. (20%)	1987	
Izumi Corp.	steering wheels-urethane plastic	Yaphank, N.Y.	185	Izumi Motor Co. Ltd.	1979	Ford GM Chrysler Nissan Motor Mfg. AMC Mazda
Kantus Corp.	plastic instrument panels, radiator grilles, glove boxes, splash guards	Lewisburg, Tenn.	150	Kanto Seiki Co. Ltd.	1985	Nissan Motor Mfg.
Kideco of Bardstown	wiper motors, cruise control devices	Bardstown, Ky.		Jidosha Denki Kogyo Co.	1987	Nissan Motor Mfg.
Komatsu America Mfg. Corp.	earthmoving equipment	Chattanooga, Tenn.	275	Komatsu	1986	
Koyo Seiko	steering wheels			Koyo Seiko	1989	Toyota Motor Mfg.
KTH Parts Industries	stamped, painted, welded parts	St. Paris, Ohio	219	American Honda (92.5%); Kikuchi Press Ind. Co. (1.875%) Hirata Press Ind. Co. (1.875%) Hongo Seisakusho (1.875%)	1985	American Honda
Kui Mfg. Co.	car decals	Detroit	350	Mitsubishi Motors	1985	GM Diamond-Star
Leblond Makino	tools, flexible manufacturing systems	Cincinnati	455	Makino Milling Co. Ltd. (51%) Leblond Inc. (49%)	1981	American Honda GM
Matsushita Communiccation Corp. of America	audio equipment	Peachtree City, Ga.		Matsushita	1987	
Matsushita Communication Corp. of America	cellular phones	Franklin Park, Ill.	24	Matsushita	1984	
Mazak Corp.	machine tools	Florence, Ky.				
Mazda Motor Mfg.	cars	Flat Rock, Mich.	3,500	Mazda Motor Corp.	1988	
MBL (USA) Corp.	belts,	Ottawa, Ill.	250	Mitsuboshi Belting Co. Ltd.	1988	Diamond-Star Toyota Motor Mfg. Nissan Motor Mfg. Isuzu Fuji Goodyear Ex-Cello
MBL (USA) Corp.	belts, hoses	Lombard, Ill.	50	Mitsuboshi Belting Co. Ltd.	1973	
Mitsubishi Consumer Electronics	cellular phones	Braselton, Ga.	240	Mitsubishi Electronics	1986	
Mitsubishi Reactive Inc.	magnets	West Pittsburgh, Pa.	5	Mitsubishi (51%) Reactive Metals (49%)	1986	GM
Morton Yokohama Inc.	windshield sealants	Ringwood, Ill.		Morton Thiokol Inc. Yokohama Rubber Co.	1988	
Musashi USA	arm bushings, joint assemblies	Battle Creek, Mich.	5	Musashi Seimitsu Industry Co.	1985	Ford
Neaton Auto Products Mfg. Inc.	steering wheels	Eaton, Ohio	75	Nihon Plastic Co.	1985	American Honda
NEC America	cellular phones	Hillsboro, Ore.	150	NEC Corp.	1985	

Venture	Products	Location	No. of Employees	Ownership	Start-Up Date	Supplier to:
New Sabina Industries	instrument panels	Sabina, Ohio	100	Nippon Seiki	1987	
New United Motor Mfg. Inc.	cars	Fremont, Calif.	2,500	GM (50%); Toyota Motor Mfg. (50%)	1984	
NGK Metals	beryllium copper alloy	Philadelphia	800	NGK Insulators	1986	
NGK Spark Plug Mfg. (USA) Inc.	spark plugs	Irvine, Calif.		NGK Spark Plug Co.	1977	
NHK-Associated Spring Suspension Components Group	valve springs, coil springs	Bowling Green, Ky.		NHK Spring Co. Ltd. (55%) The Barnes Group (45%)	1987	Toyota Motor Mfg.
NHK Spring/ Inland	stablizers, fiberglass reinforced plastic, springs, car seats			NHK Spring Co. GM Inland Division		
Nippondenso Mfg. USA Inc.	evaporators/ condensors, electrical components	Battle Creek, Mich.	455	Nippondenso	1983	Toyota Motor Mfg. American Honda
Nippondenso of Los Angeles Inc.	air conditioning systems, alternators, starters	Long Beach, Calif.	140	Nippondenso (80%) Toyota Motor Sales USA (20%)	1971	NUMMI
Nishikawa Standard Co.	sponge rubber products	Topeka, Ind.	200	Nishikawa Kasei (60%) Standard Products (40%)	1987	Mazda
Nissan Motor Mfg. USA Inc.	light trucks and cars	Smyrna, Tenn.	3,500	Nissan Motor Co.	1982	
NKC of America Inc.	transfer equipment	Memphis, Tenn.		Nakanishi Metal Works Co. Ltd.	1979	GM Chrysler VWoA
NOK Inc.	oil and mechanical seals	Lagrange, Ga.		NOK Corp.	1980	Ford Chrysler AMC Navistar GM
North American Lighting Inc. (aka NAL)	front & park lamps, rear combination lamp assemblies, fog lamps, license plate lamps	Flora, Ill.	33	Westfalische Metall Industrie AG (Hella) (51%); Koito Mfg. Co. Ltd. (39%); Ichikoh Industries (10%)	1983	Nissan Motor Mfg. BMW N.A. VWofA Ford Chrysler AMC
Nova Steel Processing Co.	slitters of steel	Tipp City, Ohio		Armco Steel (50%) C. Itoh Co. (50%)	1986	GM Truck & Bus
NSK Inc.	ball bearings	Ann Arbor, Mich.	215	Nippon Seiko KK	1975	
NTN Toyo Bower	tapered roller bearings	Hamilton, Ala.		NTN Toyo Bearing Co.	1985	
NTN Toyo-Bower Co.	bearings	Macomb, Ill.		NTN Toyo Bearing Co.	1971	
Ogihara America Corp.	body panel stampings, forgings	Howell, Mich.	100	Ogihara Iron Works	1987	GM Ford Chrysler Mazda
Oki Ameria Inc.	cellular mobile phones	Norcross, Ga.		Oki Electric Industry Co.	1984	
Omega Tube and Conduit Corp.	steel pipe for exhaust pipes, chassis, stabilizers, steering columns, axles, shocks & seat frames	Little Rock, Ark.		Sumitomo Metal Industries	1987	
Optec Daiichi Denki	magnetic wire	Mexico, Mo.		Optec Daiichi Denki	1987	GM Ford Chrysler Toyota Motor Mfg.
Penstone Inc.	automotive glass	Rockwood, Mich.	60	Ishizaki Honten Co. (70%); Nippon Sheet Glass Co. (30%)	1987	Mazda
Pioneer Industrial Components	car stereo/audio equipment	Springboro, Ohio	200	Pioneer Electric Corp.	1986	
Sanden International (USA)	air conditioning systems, compressors, evaporators	Dallas		Sanden Corp.	1980	
Sanyo Machine America Corp.	automated welding equipment	Rochester, Hills, Mich.				

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ment, while knowing that the excess capacity generated may well smother local American manufacturers — but perhaps these will be in some other state," the study said.

The report concluded that the U.S. auto parts industry is in for a big shake-out, but that there is still much opportunity.

The study offered the following advice: "In order to profit, U.S. firms must realize that, whether going it alone or in joint ventures with Japan, the concept of a unilateral vendor relationship is obsolete. Japanese values, expectations, new technology, and the market itself will not permit unilateral vendor behavior. One needs to be introduced and indicate a willingness to work together. Even though a vendor meets quantifiable criteria such as price, quality, and delivery, one must also demonstrate an attitude of cooperation and flexibility. To expect the Japanese buyer's attitude to change quickly is ill-advised. They expect sellers to adapt."

Venture	Products	Location	No. of Employees	Ownership	Start-Up Date	Supplier to:
Service Spring Inc.	leaf springs	Indianapolis		Toyoshima Specialty Steel Co.	1986	
Sheller-Ryobi Corp.	aluminum die castings, transmission housings	Shelbyville, Ind.		Ryobi Ltd. (51%); Sheller-Globe (49%)	1986	Ford GM
Showa Aluminum	aluminum heat exchangers	Mt. Sterling, Ohio	200	Showa Aluminum	1987	Subaru-Isuzu Automotive Inc.
Showa Mfg. Co.	shock absorbers	Sunbury, Ohio		Showa Mfg. Co. Ltd.	1988	American Honda Honda of Canada
Stanley Electric Co.	headlamps and taillights	London, Ohio	95	Stanley Electric	1981	American Honda
Subaru-Isuzu Automotive Inc.	cars, light trucks	Lafayette, Ind.	1,700	Fuji Heavy Industries Ltd. (51%); Isuzu Motors Ltd. (49%)	1989	
Sumitomo Electric Wiring Systems Inc.	wiring harnesses	Morgantown, Ky.		Sumitomo Electric (60%) Sumitomo Wiring Systems Ltd. (40%)	1987	Mazda
Takata Fisher Corp.	seat belts	St. Clair Shores, Mich.	50	Takata Corp. (50%) General Safety (50%)	1985	American Honda Nissan Motor Mfg.
TG (USA) Corp.	steering wheels plastic components	Perryville, Mo.		Toyoda Gosei Co. Ltd. (80%) Mitsui & Co. (20%)	1987	Toyota Motor Mfg. GM Ford Chrysler
Thermalex Inc.	aluminum exploded products for air conditioners	Montgomery, Ala.		Thermal Components Inc. (50%) Mitsubishi Aluminum Co. (50%)	1986	
Tokai Corp.	anti-vibration mounts	Battle Creek, Mich.	120	Tokai Rubber Industries	1987	Ford
Tomasco Muldiler Inc.	stamped parts	Columbus, Ohio		Masuda Mfg.	1987	
Topy Corp.	steel wheels	Frankfort, Ky.		Topy Industries Ltd.	1986	American Honda Nissan Motor Mfg. Diamond-Star Mazda
Toyota Auto Body Inc. of California	light truck beds	Long Beach, Calif.		Toyota Motor Sales USA	1974	Toyota Motor Mfg.
Toyota Mfg. USA	cars	Georgetown, Ky.	3,000	Toyota Motor Mfg.	1988	
Tri-Con Industries	seat frames	Lincoln, Neb.	56	Tokyo Seat Co.	1985	American Honda
Tri-Con Industries Ltd.	car seats	Columbia, Mo.	720	Tokyo Seat Co.	1983	Chrysler American Honda
T.S. Trim International	interior fabric panels	Canal Winchester, Ohio	300	Tokyo Seat Co.	1988	American Honda
United Globe Nippon Inc.	sound control material, protective coatings, trunk linings	Chicago Heights, Ill.		Nikon Tokushu Yoryo Hirotoni Co. Fujiyoshi Co. (50%); Globe Industries (50%)	1987	Diamond-Star American Honda
United L-N Inc.	glass	Versailles, Ky.	200	Nippon Sheet Glass Co. Ltd. (50%) Libbey-Owens-Ford (50%)	1987	GM Toyota Motor Mfg.
UT-Furukawa Joint Venture	wire harnesses	El Paso, Texas		United Technologies Automotive Furukawa Electric		
VDO-Yazaki Corp.	instrument clusters	Winchester, Va.		VDO Adolph Schindling AG (50%) Yazaki Corp. (50%)	1986	VWoA
Viam Mfg. Inc.	floor mats	Santa Fe Springs, Calif.	50	Japan Vilene Co. Ltd. (60%); Dainippon Ink and Chemicals Inc. (40%)	1984	GM Chrysler
Warner-Ishi Corp.	turbocharger housings	Shelbyville, Ind.	30	Borg-Warner Corp. (50%) Ishikawajima Heavy Industries (50%)	1985	
Woodbridge Inouac	instrument panel exterior trim	Bardstown, Ky.	50	Woodbridge Foam (Canada) (51%) Inoue MTP Co. (49%)	1988	Ford Diamond-Star
Wynn's-Kiki Inc.	air conditioning compressors	Fort Worth, Texas	90	Wynn's Industries (50%); Diesel Kiki Co. Ltd. (50%)	1984	
Yuasa General Battery Corp.	batteries for cars and motorcycles	Reading, Pa.		Yuasa Battery America (51%) General Battery Corp. (49%)	1977	American Honda

SOURCE: Motor and Equipment Manufacturers' Association

State legislators oppose pre-emption of lemon laws

By Helen Kahn
AUTOMOTIVE NEWS STAFF REPORTER

WASHINGTON — The National Conference of State Legislatures has passed unanimously a resolution opposing federal preemption of state lemon laws.

The action follows the recent adoption of a similar resolution by the National Association of State Attorneys General. The National Association of Civil Administrators is expected to take a similar position at its annual convention next month in Atlanta.

Both domestic and foreign automakers prefer a single federal rule or uniform state laws. They are concerned over differences among the 40-some state lemon laws. Lemon laws specify consumer rights in settling complaints about defective cars.

Automakers say they doubt they can get a federal rule that will pre-empt state lemon laws. Instead, the makers are trying to get some relief through a proposal made to an advisory group considering changes in a Federal Trade Commission rule governing informal dispute settlement procedures. A decision is expected in a month or two.

The legal headaches stem indirectly from passage of the 1975 Magnuson-Moss Act, which defined certain consumer rights if manufacturers offered written warranties. It also encouraged establishment of informal dispute settlement procedures.

The FTC, as required under the law, wrote a rule (known as 703) spelling out obligations of manufacturers and consumers in settling warranty complaints out of court.

Many automakers now use national arbitration programs such as the National Automobile Dealers Association's AUTOCAP or the Better Business Bureau's Autoline. But the FTC has never said whether those programs meet the federal rule's guidelines.

The FTC 703 rule, which does not pre-empt state lemon laws, is now the subject of discussions by an independent advisory group set up by the FTC. The group includes representatives from the auto industry (manufacturers and dealers), consumer groups (Center for Auto Safety, Motor Voters, Consumers Union) and state legislators.

It is to those groups that the automakers are proposing a solution less sweeping than federal pre-emption.

They suggest making the FTC rule effective only after states with two-thirds of the nation's population have enacted lemon laws that:

- Require a consumer to use the manufacturer's arbitration program before going to court.
- Does not place any new obligations on the manufacturer.

In effect, that would mean uniformity in states with two-thirds of the population. But it also would mean that states with tough lemon laws could not qualify as part of the necessary two-thirds.

Connecticut's lemon law, for example, with its own state-run arbitration program, would appear not to qualify. Neither, apparently, could the lemon laws of Florida or Wisconsin.

The FTC staff has scheduled a final meeting in June for the rulemaking group to decide whether agreement can be reached on changing the federal informal dispute settlement procedures rule. The FTC staff has stated no desire for its rule to pre-empt states' rights to legislate or regulate consumer rights for repair/replacement under warranty, but the staff stressed it could not speak for current or future commissioners.

FTC Chairman Daniel Oliver has refused to say whether he favors having the FTC rule pre-empt state laws, and his position has made state legislators and consumer activists somewhat concerned.

The pre-emption issue was recently debated by David A. Collins, a General Motors attorney who has been serving on the FTC advisory committee, and John J. Woodcock, the Connecticut lawmaker most responsible for the strict Connecticut lemon law that has its own state-run arbitration programs.

They debated before the National Conference of State Legislatures prior to a vote opposing pre-emption of lemon laws.

After reviewing some of the court decisions on pre-emption, Collins said, "The bad news from your perspective, and from our perspective, too, is that the laws are taking new and different shapes and forms."

Some of those new varieties, he added, put lemon laws on a "self-destructive collision course with federal law, sooner or later."

Collins said the original lemon laws — allowing a dealer four attempts to repair a car and requiring a manufacturer to buy back the car if it is in a dealer's hands for 30 days — are very hard to assail as a matter of fairness. Collins said it is hard to say "four cracks at a serious problem isn't enough, and we aren't saying that any more."

But, said Collins, it is the new details cropping up in lemon laws that are unfair, sometimes to manufacturers and sometimes to consumers.

He said that one form of lemon-law unfairness insulates dealers from accountability for the poor service they may have provided. Collins admitted some defective cars defy repair. Dealers should not be responsible for fixing them.

But the bulk of the lemons, which the automakers are buying back, according to Collins, are cars that the dealer has let sit for 30 days, or cars for which the dealer has failed to order the necessary parts, or cars with a problem the dealer just has not diagnosed.

Making the dealer accountable under the lemon laws, added Collins, is an incentive to do the job right. Moreover, the consumer should not be caught between the dealer and the manufacturer. Dealers and automakers ought to be the ones to argue it out, according to Collins. As it is now, in some states dealers claim the unsuccessful repair is the manufacturer's fault.

Woodcock, taking his turn in the debate, said the states have taken a leadership role because the FTC failed to do so. He said the Connecticut attorney general has been waiting for four years for FTC to tell him whether the Better Business Bureau arbitration program meets the federal guidelines spelled out in rule 703.

State enforcement is necessary, said Woodcock, because the FTC has been in a "deep coma."

Woodcock said he is concerned that the potential for a pre-emptive initiative is real, and he said he thinks Congress should be warned because that is where the auto industry is going next for help. Woodcock said he believes the automakers have already been to the White House, and Congress is next.

Woodcock warned that pre-emption would create a moratorium on what states have done to supervise and monitor industry arbitration programs. And he viewed that as a big problem because of the track record of the FTC.

In addition, he said pre-emption would create a moratorium on further state initiatives, and by creating a precedent, it would have a chilling effect on what states may want to do.

NHTSA won't require makers to label auto lights

WASHINGTON — NHTSA will not require manufacturers of automobile lighting equipment to label their products with the name of the manufacturer, the function of the product and the letters "DOT" signifying compliance with government standards.

The agency proposed the requirements on Jan. 24, 1986, after receiving a petition from Peterson Manufacturing Co., Grandview, Mo. Peterson said the labeling requirements would identify off-shore manufacturers that had been exporting counterfeit products to the United States.

NHTSA said it decided not to approve the request after comments were filed with the agency indicating the proposal would impose significant cost increases on a number of manufacturers.

NHTSA said the comments also suggested that a marking requirement would not deter a counterfeiter from copying the markings of a reputable manufacturer.

Auto patent race heats up, but are all ideas important?

By Matt DeLorenzo
AUTOMOTIVE NEWS STAFF REPORTER

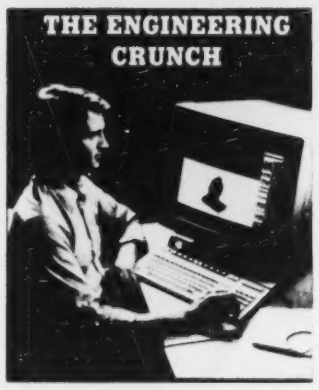
WASHINGTON — The conventional wisdom is that the United States is at the leading edge of technology, while the Japanese lack originality but build good products.

This ability to invent — viewed as a competitive advantage over the rest of the world — does not hold up when the number of patents issued is examined.

Between 1970 and 1986, the number of patents issued in the United States grew from 64,429 to 76,862. But the number of patents awarded to U.S. inventors during that period declined from 47,077 to 42,003. Patents granted to foreign nationals, on the other hand, doubled from 17,352 in 1970 to 34,859 last year.

While the U.S. continues to lead in patents for materials, computers and pharmaceuticals, Japan recently took the lead in a class critical to the auto industry — the internal combustion engine.

Between 1981 and 1985, 2,007 patents issued by the United States, or 38.2 percent of this category, went to the Japanese. U.S. inventors and companies received 1,802 patents, or 34.3 percent, during the same period.



Although the total is higher than the 1,615 engine patents issued to the U.S. inventors and companies between 1976 and 1980, the share of total patents issued is down from the 41.3 percent during the earlier time period.

According to Francis Narin, president of Computer Horizons Inc., a research firm that compiled the data for the National Science Foundation, "The U.S. share has gone down substantially, while the class as a whole is growing, since the U.S. was able to take a larger share of the class with fewer patents in 1976-80."

In total number by class, the internal-combustion-engine category ranks 15th on the list of U.S. patents awarded to American inventors. Japanese individuals and companies, however, have their greatest number of U.S. patents in this category.

For West Germany, the number of U.S. patents for the internal combustion engine ranks second behind pharmaceuticals, while it ranks fifth for those from Great Britain.

Some, however, dispute those numbers as an accurate measure of competitiveness.

"The Japanese tend to patent all over," said David E. Cole, director of the Center for Automotive Studies at the University of Michigan. "Our tendency is to be a little more cautious. When you patent, you disclose."

W. Dale Compton, a senior fellow at the National Academy of Engineering in Washington, agreed: "I don't think that the numbers mean that much."

Compton, a former vice president of research for Ford Motor Co., noted: "A large number of those patents are for ideas for which we would say we know what's in there, and we didn't think it was worth patenting."

Computer Horizon's Narin conceded the point but added that Japanese patents in general are the most often cited in the U.S. patent system — an indication of the strength of their ideas. "I think it's a pretty good reflection," he said. "If there are an enormous amount of carburetion and combustion patents that are being cited, then those patents are not token patents by any means."

Frank Walter, director of corporate timing planning for Chrysler and immediate past president of SAE, said, "We've been producing engines for essentially a century. However, we know relatively little about combustion. The Japanese realize we don't know much about combustion, and they participate more in writing papers and patenting the result of their research."

If a nation cannot apply those innovations to the products it manufactures, the triumph of technology is a hollow victory.

"Where they (the Japanese) are strong in patents, you will see that they are strong in products," Narin said. "If you go down the list of Japanese patents and walk down any good shopping street, you'll see the same things."

Narin concluded, "Given that, I find it hard to dismiss the connection between patents and competitive products."

"The three most important factors in the auto industry are product, product and product," said John Schnapp, an industry analyst with Temple, Barker & Sloane. "A company with strong product and a weak everything else can be successful, while a company with lousy product and strong everything else will have problems."

M. Carl Ziemke and James K. McCollum, of the University of Alabama in Huntsville, feel strongly that there is a gap in mechanical innovation between U.S. products and those produced by foreign makers.

Writing in the spring 1987 issue of Massachusetts Institute of Technology's Sloan Management Review, the pair contended, "Foreign automobiles' superior mechanical design features are the significant factor in their strong competitive position.

"Japanese superiority in mechanical innovation has developed largely over the last decade — often because Japanese manufacturers resurrected American breakthroughs that were once ahead of their time."

Indeed, many of the people who say the number of patents is a poor measure of U.S. engineering competitiveness also say that many of the innovations currently or about to be marketed by the Japanese — such as multi-valve technology and four-wheel steering — are familiar to U.S. makers. Some are being pursued, others have been discarded by the domestic industry.

Chrysler's Walter said the competition "is finding the technology that we produced but haven't followed up on."

"Four-wheel drive, four valves per cylinder, four-wheel steering, infinitely variable transmissions — we have all done these things before," Walter said. "I worked on an infinitely variable transmission in 1952-53-54. We didn't stay with it long enough to solve the technical problems. Part of it is being willing to take enough risks and fail in order to be successful."

Compton maintained that engineering prowess is not the issue, but rather marketing and management decisions on whether a particular technology will be introduced. That decision, he added, is based on cost more often than not.

"The Japanese, by offering these innovations, are saying 'this is how we protect our market share,' " Compton said. "With the devaluation of the dollar, can they now afford to bring on these ideas? Now they are competing head-to-head (with the United States) and the question will be what value is it to the customer, how well will it work?"

Ulrich Seiffert, executive director of research for Volkswagen AG, said he feels that the Japanese, while formidable competitors in manufacturing, put innovations on cars just for innovation's sake rather than for any need demonstrated by the consumer.

"A typical example is one Japanese company that offered an electronically controlled spring damping system," he said. "The car was nearly undriveable at 110 kph (69 mph) on the autobahn.

"We never could do that at Volkswagen. People expect proven technical solutions," he said. Seiffert said the European emphasis is on what he called honest engineering.

"The car owner is a very clever customer. He will find out very soon whether something that was promised by the designer or developer is really a benefit in his own experience."

As a result, Seiffert questioned the benefit of such innovations as voice warning systems, four-wheel steering and ceramic adiabatic diesel engines.

"We did our first tests (on 4ws) back in 1976 at Volkswagen with an Audi 100, and we still have our doubts that in a car with good handling characteristics you have really an observed improvement," he said. Seiffert believes most automotive innovations, from antilock braking to electronic fuel injection, have come and will come from Europe.

The cost/benefit view is shared in the United States. Cole said one of the reasons U.S. makers seem to be behind in bringing four-valve technology and small four-cylinder, high-output engines to the market is that simpler, larger engines could do the same job at lower cost.

Robert Isenhour, an auto industry consultant for United Research, charged that the fault lies with aging management and engineering communities.

"When you consider the demographics of the American car com-

see PATENT, page 39

Where patents are being granted

Country	1986	1985	1980	1975	1970
United States	42,003	39,554	37,357	46,717	47,077
Japan	13,857	12,746	7,124	6,352	2,625
West Germany	6,992	6,665	5,747	6,036	4,435
France	2,510	2,400	2,088	2,367	1,731
United Kingdom	2,842	2,495	2,406	3,043	2,954

SOURCE: U.S. Patent and Trademark Office

Auto industry R&D spending
(expressed as a percentage of total gross national product)

Country	1970	1984
United States	6.8	6.6
Japan	9.5	15.7
West Germany*	14.7	14.8
United Kingdom*	7.2	5.8
France†	9.7	11.1

*West German and United Kingdom figures are for 1969 and 1983
†French figures are for 1970 and 1983
SOURCES: National Science Foundation and others

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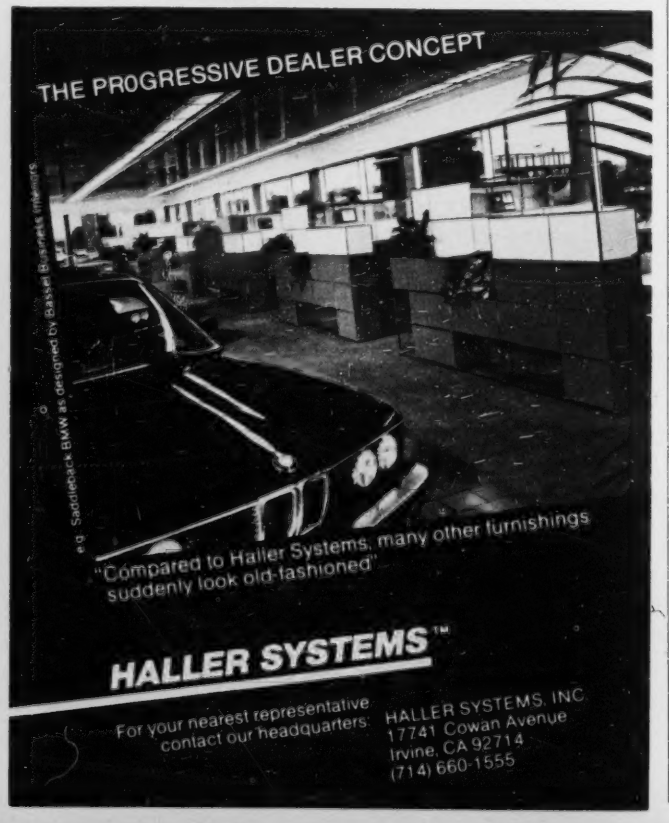
THE PROGRESSIVE DEALER CONCEPT
e.g. Saddleback BMW as designed by Bassel Bussraks Interiors
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PATENT

FROM PAGE 38

panies, if you look at management, you're basically looking at the class of 1938," he said. "There is a striking compression of 50- to 60-year-old men running the companies. They tend to be conservative and resistant to change."

Although Detroit's automakers insist that things have loosened quite a bit in recent years, Walter feels that "NIH" (not invented here) remains a factor.

"The competition starts with a worldwide survey of knowledge and builds from that base," he said. "We still are tied up a little with 'not invented here.' We tend to re-invent the wheel rather than start with existing knowledge."

As a result, he said, "We don't go forward fast enough. We tend to strap ourselves."

Kim Clark, a professor at the Harvard Business School, recently told the Detroit section of the SAE that the ability to bring innovation to the market will become increasingly important.

"Not only is cost and quality an entry ticket that you've got to have, but the growing fragmentation of the marketplace and growing technical diversity means you've got to achieve that cost and quality at the same time your product structure and the structure of your technology becomes more complex," Clark said.

"It's not just a simple question of really working cost and quality in terms of meeting customer needs, but meeting the growing diversity of customer needs," he said.

Comptom believes U.S. industry has responded to those needs, especially in the area of electronics. He noted that during his tenure at Ford "we developed the first onboard electronic computers that led to the electronic engine control systems."

Ziemke and McCollum in their paper for the Sloan Management Review agreed, to a point. "The automobile industry has benefited greatly from microelectronic advances such as the invention of the microprocessors in 1970," they said. "Such developments, produced primarily for the computer and defense industries, make possible the digital ignition, emission and fuel system controls found on most American cars since 1981," they said.

However, they criticized the industry for using electronics on "gadgets — so-called electronic dashboards and other options that, though advertised intensively, are not important to the safe, efficient operation of the car."

They also said that many of the engineering innovations that came about in the 1970s — of which electronic-engine controls played an important part — were in response to government standards on emissions and fuel economy. While most of those requirements have been satisfied, Ziemke and McCollum maintained that this freed manpower should be devoted to "matching or exceeding the technical quality of the foreign competition."

While some observers believe the industry needs to rethink its attitudes toward the basic product, there is still room for leading-edge technologies to have a tremendous impact on the business. General Motors' new Magnequench process of developing a new supermagnet material that will lead to smaller starters and alternators is a step in the right direction.

But some observers believe the industry cannot rely solely on those types of breakthroughs to keep pace with the competition, especially when the competition can run faster and farther with those developments. As their own developments come on stream, they will leave the United States farther and farther behind.

"It was a seller's market for the U.S. industry for the past 60 years. Then it changed for the last 10 to 15 years," according to United Research's Isenhour.

"The U.S. industry has tried to adapt to these changes. We will never have a domestic industry where they sell 95 percent of the cars to the public. However, the auto industry is in a better position to recapture a significant share as compared to the textile or the electronics industry."

Automakers in U.S. lag in r&d funds

By Matt DeLorenzo
AUTOMOTIVE NEWS STAFF REPORTER

WASHINGTON — The United States is keeping pace with other countries in the expenditure of funds for research and development as a percentage of gross national product.

But the automotive industry lags behind other countries in the cash it devotes to r&d as a proportion of overall spending.

According to the National Science Foundation's International Science and Technology Update for 1987, an estimated 2.7 percent of the country's GNP was spent on research and development last year. This compared with an estimated 2.8 percent each for France and the United Kingdom and 2.4 percent for West Germany. Japan spent 2.8 percent in 1985, the latest year for which figures are available.

In total dollars, however, the United States — because of the size of the economy — outspent Japan in 1984 by $47 billion. It devoted more than $77 billion to r&d compared with Japan's $30 billion. West Germany spent half as much as Japan, and France and France spent $11.5 billion.

Research and development spending on motor vehicles as a share of total spending remained relatively constant in the United States between 1970 and 1984, according to the National Science Foundation. In 1970, it amounted to 8.8 of total spending and in 1984 it was 8.6 percent.

Japan, on the other hand, significantly increased its share of motor-vehicle r&d funds, moving from 9.5 percent in 1970 to 15.7 percent in 1984. The share of motor-vehicle r&d in France and West Germany remained relatively stable. France's increased from 9.7 to 11.1 percent, while Germany's moved from 14.7 to 14.8 percent. The United Kingdom's decreased from 7.2 to 5.8 percent.

Adjusted non-defense r&d as a proportion of GNP in 1985 amounted to 1.9 percent in the United States, compared with 2.7 percent in Japan, 2.6 percent for West Germany and 2 percent for France. The United Kingdom's non-defense r&d amounted to 1.6 percent of GNP.

One factor in the smaller percentage of funds devoted to motor vehicles in the United States is undoubtedly related to the high expenditures for aerospace.

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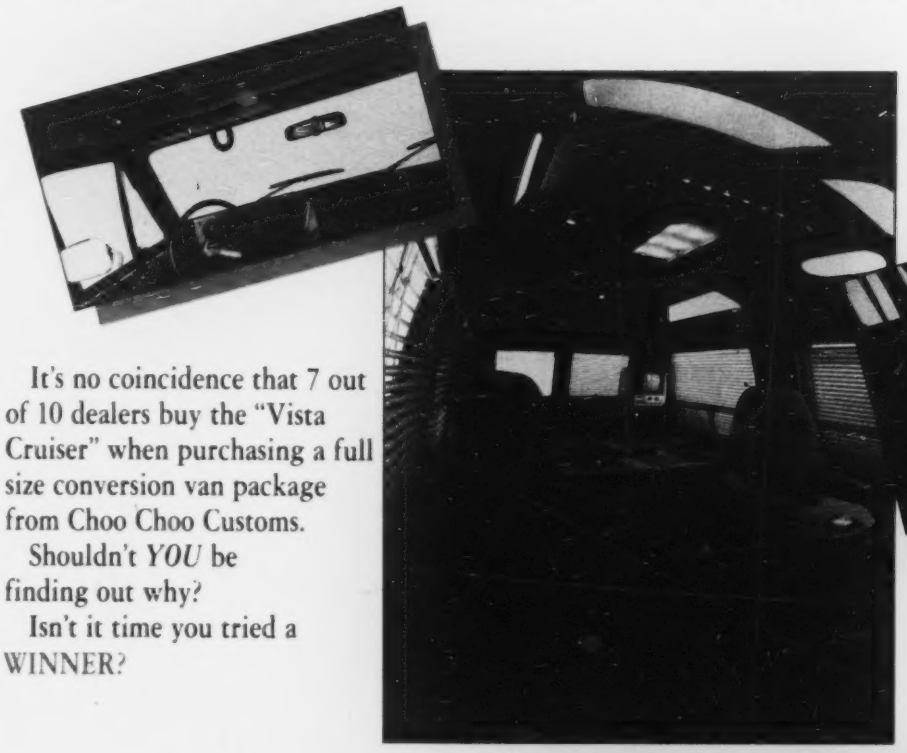

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AUCTION DATES

American Motors

May 26 — Statesville Auto Auction, Statesville, N.C.

May 27 — Columbus Fair Auto Auction, Columbus, Ohio; Metro Milwaukee Auto Auction, Caledonia, Wis.; and Kansas City Auto Auction, Kansas City, Mo.

May 28 — Aptco Auto Auction, Taylor, Mich.; Todd Auto Auction, Telford, Pa.; and Evansville Auto Auction, Evansville, Ind.

June 2 — D-A Auto Auction, New Stanton, Pa.

June 3 — Minneapolis Auto Auction, Plymouth, Minn.

June 4 — Corry Auto Auction, Corry, Pa., and Greater Chicago Auto Auction, Chicago.

June 5 — St. Louis Auto Auction, Bridgeton, Mo.

Chrysler Corp.

May 26 — American Auto Auction, Walpole, Mass.; Arena Auto Auction, Chicago; and Hatfield Auto Auction, Hatfield, Pa.

May 27 — Southwest Auto Auction, Phoenix, Ariz.; Butler Auto Auction, Gibsonia, Pa.; Metro Auto Auction of Kansas City, Lee's Summit, Mo.; and Minneapolis Auto Auction, Plymouth, Minn.

May 28 — Clanton's Auto Auction, Darlington, S.C.; Indianapolis Auto Auction, Indianapolis; and Golden Gate Auto Auction, Fremont, Calif.

Ford Motor Co.

May 28 — 166 Auto Auction, Springfield, Mo.; Skyline Auto Exchange, Fairfield, N.J.; and Southwest Auto Auction, Phoenix, Ariz.

June 2 — Indianapolis Auto Auction, Indianapolis.

June 3 — Northway Auto Auction, Clifton Park, N.Y.; Metro Auto Auction of Kansas City, Lee's Summit, Mo.; Lakeland Auto Auction, Lakeland, Fla.; and Southern California Auto Auction, Fontana, Calif.

June 4 — Nashville Auto Auction, Nashville, Tenn.

June 9 — Harrisonburg Auto Auction, Harrisonburg, Va.

June 10 — Atlanta Auto Auction, Red Oak, Ga., and Concord Auto Auction, Acton, Mass.

June 11 — Arena Auto Auction, Chicago; Dallas Auto Auction, Dallas; and Bay Cities Auto Auction, Hayward, Calif.

June 17 — Lakeland Auto Auction, Lakeland, Fla., and Southern California Auto Auction, Fontana, Calif.

June 18 — Denver Auto Auction, Englewood, Colo.; Aptco Auto Auction, Taylor, Mich.; Minneapolis Auto Auction, Plymouth, Minn.; Skyline Auto Exchange, Fairfield, N.J.; and 166 Auto Auction, Springfield, Mo.

June 23 — South Seattle Auto Auction, Kent, Wash.

June 24 — Columbus Fair Auto Auction, Obetz, Ohio, and Clanton's Auto Auction, Darlington, S.C.

General Motors

May 28 — Florida Auto Auction of Orlando (Orlando Extravaganza), Orlando, Fla.

June 2 — Southern Auto Auction, East Windsor, Conn.; Dallas Auto Auction, Dallas; and 166 Auto Auction, Springfield, Mo.

June 3 — Atlanta Auto Auction, Red Oak, Ga.; Clanton's Auto Auction, Darlington, S.C.; and Omaha Auto Auction, Omaha, Neb.

June 4 — Arena Auto Auction, Chicago; Ohio Auto Auction, Columbus, Ohio; and St. Louis Auto Auction, Bridgeton, Mo.

Used Car Sales
Auction Averages

May to date	$5,877
Month ago	$5,823
Year ago	$5,139

Model Breakdown
Auction Averages

	MAY 1987	APR 1987	MAR 1987
1987	$12,096	$13,266	$13,443
1986	$9,402	$9,460	$9,609
1985	$7,208	$7,236	$7,305
1984	$5,756	$5,732	$5,825
1983	$4,854	$4,842	$4,860
1982	$3,717	$3,727	$3,755
1981	$2,719	$2,635	$2,643
1980	$2,160	$2,170	$2,155
Overall Average	$5,877	$5,832	$5,829

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PRODUCTION

Output sub-par again

By Kathy Barbaglia
AUTOMOTIVE NEWS STAFF REPORTER

Four General Motors plants were idle last week and auto production fell below 150,000 for the second straight week.

Last week's output totaled 149,777 cars, 1.79 percent more than the previous week's 147,143.

The week's build was 11.03 percent below the year-ago week's 168,337.

Companies split last week's estimated build as follows: GM, 46.86 percent; Ford Motor Co., 27.39 percent; Chrysler Motors, 14.96; Honda of America Manufacturing Inc., 4.47 percent; New United Motor Manufacturing Inc., 2.50 percent; Nissan Motor Manufacturing Co., U.S.A., 1.98 percent; Volkswagen of America, 1.34 percent; and American Motors, 0.50 percent.

GM's Fiero plant in Pontiac, Mich., and its Willow Run, Mich., plant are expected to resume output Tuesday (May 26). Both plants were idle last week for inventory adjustment.

As previously reported, GM's Arlington, Texas, and Fairfax, Kan., plants are down for model changeover.

The Arlington plant is expected to resume operations Sept. 14, and the Fairfax facility is slated to return Oct. 19.

GM will close plants for one week in Willow Run (June 15); Wentzville, Mo. (June 1); Norwood, Ohio, and Tarrytown, N.Y., (June 8); and Oklahoma City (June 22) to adjust inventories.

No Saturday (May 23) overtime was scheduled because of the Memorial Day weekend.

Saturday (May 30) overtime is scheduled for Ford's Kansas City plant.

Daily overtime is slated this week at Chrysler's Newark, Del.; Sterling Heights, Mich.; and St. Louis (No. 1) plants.

All assembly plants are closed today (May 25), Memorial Day.

Trucks slip from 17-month high

After reaching a 17-month high, U.S. truck production slipped to 78,280 units last week. It was 4.47 percent below the previous week's 81,941, which was the highest total since the week ended Dec. 14, 1985, when 83,892 trucks were assembled.

Last week's output was 3.64 percent more than the year-ago week's 75,528.

Saturday (May 30) overtime is scheduled for Ford Motor Co.'s Norfolk, Va., and Louisville, Ky., plants.

No overtime was slated last Saturday, and all plants are closed today because of Memorial Day.

Holiday cuts Canadian schedules

Production of cars and trucks in Canada dipped last week as assembly plants worked only four days because of Victoria Day (May 18).

Scheduled production of 14,237 cars was 12.33 percent below the prior week's 16,239 and 28.33 percent below the year-ago week's 19,865.

So far this year, 328,962 cars have been produced, 29.84 percent less than the 468,904 completed last year at this point.

Truckmakers scheduled production of 15,440 units last week, 6.55 percent below the prior week's build of 16,522 and 6.16 percent below the year-ago week's 16,454.

Year-to-date, 325,992 trucks have been built, 15.12 percent less than the 384,075 assembled last year at this time.

General Motors' Ste. Therese, Quebec, plant resumed operations May 19. The plant had been idle for model changeover to A-body cars.

CANADIAN CAR	Week Ended May 23, 1987	Week Ended May 24, 1986	Week Ended May 16, 1987	May to Date	Jan. 1 to May 24, 1986	Jan. 1 to May 23, 1987
AMERICAN MOTORS	80	52	88	274	2,405	2,543
FORD MOTOR	9,105	8,961	11,119	33,888	227,585	213,678
GENERAL MOTORS	4,572	10,672	4,488	10,169	234,488	234,488
HONDA	300	0	319	991	0	1,852
VOLVO	180	180	225	675	4,426	4,185
Total Cars, Canada	14,237	19,865	16,239	45,997	468,904	328,962
U.S. TRUCK☆						
CHEVROLET	22,732	22,320	24,784	73,806	502,403	451,262
DODGE	4,900	3,413	6,714	19,287	14,292	101,307
FORD	32,364	31,201	31,677	101,603	605,713	613,480
GMC	8,085	7,499	8,057	27,093	150,619	152,855
NAVISTAR*	1,679	1,584	1,660	5,328	31,051	30,718
JEEP	4,000	3,223	4,485	13,919	79,012	87,561
NISSAN	1,770	3,938	1,814	5,738	45,340	33,703
AM GENERAL*	450	50	450	1,440	1,022	3,750
MISCELLANEOUS*	2,300	2,300	2,300	7,360	46,200	43,700
Total Trucks, U.S.	78,280	75,528	81,941	255,573	1,475,652	1,518,336
CANADIAN TRUCK						
AMERICAN MOTORS	625	589	779	2,336	8,774	12,939
CHRYSLER	7,000	8,251	8,029	25,364	178,085	165,907
FORD	2,888	2,837	3,377	10,123	71,939	62,843
GENERAL MOTORS	4,755	4,618	4,126	14,882	121,181	80,490
NAVISTAR	172	179	211	638	4,096	3,813
Total Trks., Canada	15,440	16,454	16,522	53,342	384,075	325,992
N. Am. Trucks	93,720	91,982	98,463	308,916	1,859,727	1,844,328

☆—Includes window van production. *—Estimated
Jeep includes commercial only. AM General includes government-destined vehicles.
Miscellaneous includes estimates for Mack, Volvo-White, Kenworth, Peterbilt, Freightliner, Mercedes-Benz, etc.
Monthly estimates may contain error of one or two units due to rounding.

U.S. CAR	Week Ended May 23, 1987	Week Ended May 24, 1986	Week Ended May 16, 1987	May to Date	Jan. 1 to May 24, 1986	Jan. 1 to May 23, 1987
AMERICAN MOTORS	750	0	1,015	2,841	20,625	14,087
Renault Total	750	0	1,015	2,841	20,625	14,087
Alliance	750	0	1,015	2,841	18,084	14,087
Encore	0	0	0	0	2,541	0
CHRYSLER MOTORS	22,400	24,970	24,244	74,817	574,148	474,115
Plymouth Total	5,300	8,355	5,569	17,596	167,455	150,785
Horizon	0	3,236	0	0	64,481	32,997
Sundance	1,800	0	2,076	6,115	0	43,657
Reliant	2,300	3,859	2,118	7,231	73,453	49,599
Caravelle	1,100	865	1,105	3,576	22,684	23,114
Gran Fury	100	395	270	673	6,827	1,418
Chrysler Total	8,600	6,649	9,426	29,325	192,059	149,237
Laser	0	777	0	0	21,506	0
LeBaron K	1,500	2,126	1,505	4,976	49,168	35,131
LeBaron J	3,400	0	3,524	11,029	0	45,721
LeBaron GTS	800	47	1,037	2,947	26,955	17,505
N. Yorker/E-Class	1,600	1,429	1,625	5,242	38,882	35,701
Fifth Avenue	1,300	2,270	1,735	5,131	55,548	15,179
Dodge Total	8,500	9,966	9,249	27,897	214,644	174,093
Daytona	1,600	1,148	1,761	5,336	21,878	22,253
Omni	0	3,007	0	0	63,850	28,363
Shadow	2,100	0	2,506	7,284	0	42,834
Aries	3,000	3,126	2,906	9,221	54,350	46,846
Dodge 600	900	1,702	993	3,039	35,996	20,338
Lancer	600	55	674	1,961	24,677	11,234
Diplomat	300	928	409	1,056	13,893	2,225
FORD MOTOR	41,019	39,286	42,433	130,696	758,177	807,296
Ford Division	29,828	26,541	30,654	94,173	518,777	564,749
Escort	9,207	8,000	9,114	27,260	165,735	150,049
Mustang	4,611	3,601	4,480	14,542	82,956	88,809
Tempo	3,947	4,425	4,543	13,217	85,409	79,071
Taurus	7,899	7,358	7,858	25,330	113,245	180,466
Thunderbird	4,164	3,157	4,659	13,825	71,432	66,354
L-M Division	11,191	12,745	11,779	36,523	239,400	242,547
Mercury Total	7,102	9,073	7,679	23,414	163,083	167,539
Lynx	257	1,450	244	882	27,148	18,903
Capri	0	109	0	0	6,792	0
Topaz	1,505	1,005	1,742	5,050	25,870	25,275
Cougar	2,767	2,954	3,089	9,206	49,891	66,406
Sable	2,573	3,555	2,604	8,275	53,282	56,955
Lincoln Total	4,089	3,672	4,100	13,109	76,317	75,008
Continental	408	407	418	1,318	8,632	7,517
Lincoln	3,066	2,753	3,075	9,832	57,245	56,255
Mark VII	615	512	607	1,959	10,440	11,236
GENERAL MOTORS	70,198	94,406	63,642	236,011	1,863,691	1,538,023
Buick Total	12,693	18,220	4,667	33,083	316,193	242,641
Skyhawk	168	1,900	64	232	36,576	13,945
Century	3,684	5,374	1,980	10,878	104,481	77,109
Regal	1,200	1,966	1,224	3,775	23,789	18,709
Somerset/Skyhark	1,140	2,553	1,146	3,801	42,780	31,042
LeSabre (fwd)	3,840	3,811	0	8,135	48,405	47,919
LeSab./Elec. (rwd)	20	373	9	125	5,866	4,854
Electra (fwd)	2,400	1,640	0	5,339	44,251	41,972
Riviera	241	609	244	799	10,045	7,091
Cadillac Total	5,516	8,452	5,574	17,652	136,047	126,122
Cimarron	200	649	245	681	11,253	6,544
Allante	145	0	119	415	0	1,417
Brougham (rwd)	1,200	2,413	1,164	5,476	37,132	33,000
DeVille (fwd)	2,800	4,294	2,950	7,751	69,353	67,853
Eldorado	573	564	572	1,752	9,864	7,391
Seville	518	532	524	1,576	8,445	9,917
Chevrolet Total	26,670	27,768	25,959	94,717	594,394	582,561
Chevette	0	1,819	0	0	47,334	0
Camaro	2,150	4,890	2,234	6,800	88,176	42,551
Cavalier	8,300	8,728	7,759	25,161	177,572	149,857
Celebrity	8,080	5,791	8,121	25,860	124,142	151,942
Corsica/Beretta	7,500	0	3,838	19,724	0	108,455
Monte Carlo	0	2,186	1,418	4,254	48,539	29,122
Chevrolet	2,000	3,714	1,943	10,855	98,234	88,421
Corvette	640	640	646	2,063	11,397	12,213
Oldsmobile Total	11,741	21,060	13,224	45,077	469,226	290,246
Firenza	233	549	55	288	20,437	3,699
Calais	3,660	2,166	3,694	11,640	54,688	50,522
Cutlass Ciera	2,646	4,888	4,754	12,798	113,356	74,006
Cutlass Supreme	1,170	2,000	1,168	5,533	73,412	29,550
88 (fwd)	2,160	8,631	1,935	8,989	140,438	82,511
88 (rwd)	394	534	372	1,303	9,524	7,756
Olds 98	960	1,866	722	2,849	50,127	31,321
Toronado	518	426	524	1,677	7,244	7,283
Pontiac Total	11,578	18,905	14,218	45,481	346,831	296,453
Acadian*	0	916	0	0	6,773	0
Fiero	0	1,550	1,134	2,376	32,522	15,089
1000	0	1,542	0	0	12,256	0
Firebird	1,802	2,624	1,537	5,017	47,217	32,733
2000 Sunbird	2,346	3,102	2,200	7,286	59,521	47,776
Grand Am	5,260	5,010	6,234	18,760	91,959	104,851
6000	2,170	3,258	0	4,846	63,638	34,305
Bonneville	0	0	3,113	6,881	0	56,851
Safari/Parisienne	0	904	0	316	32,945	4,848
HONDA	6,700	4,139	6,718	21,578	76,294	132,554
Civic	3,150	0	1,831	6,811	0	42,139
Accord	3,550	4,139	4,887	14,767	76,294	90,415
NISSAN	2,960	0	2,989	9,485	21,517	56,442
NUMMI	3,750	3,600	4,143	12,878	73,108	77,127
Corolla	750	0	851	2,620	0	15,719
Nova	3,250	3,600	3,293	10,258	73,108	61,408
VOLKSWAGEN	2,000	1,936	1,959	3,959	36,667	29,886
Golf/GTI	1,750	1,936	1,709	3,459	36,667	24,936
Jetta	250	0	250	500	0	4,950
Total Cars, U.S.	149,777	168,337	147,143	492,264	3,424,227	3,129,530
Total Cars, Canada	14,237	19,865	16,239	45,997	468,904	328,962
N. American Cars	164,014	188,202	163,382	538,261	3,893,131	3,458,492
N. Am. Trucks	93,720	91,982	98,463	308,916	1,859,727	1,844,328
North American Cars and Trucks	257,734	280,184	261,845	847,177	5,752,858	5,302,820

*—All Acadians are built for sale in Canada
Monthly estimates may contain error of one or two units due to rounding.

GM contract at Van Nuys beats threat

By Jesse Snyder
AUTOMOTIVE NEWS STAFF REPORTER

VAN NUYS, Calif. — Production of Chevrolet Camaros and Pontiac Firebirds under a Japanese-style contract began here last week, despite efforts by dissident UAW workers to obtain an injunction preventing implementation of the work-rule changes.

UAW Local 640 President Peter Beltran and three others, acting as individuals because the membership had ratified the local agreement, had sought a permanent injunction against implementing team-concept methods. A Superior Court judge denied the request.

Joe Garcia, the local's financial secretary, said the injunction was sought in connection with "GM's breach of contract." Garcia said General Motors promised a new product for Van Nuys in exchange for the agreement but the plant has not been awarded a new product.

Garcia said the judge did did not rule on the merits of the suit. A hearing is scheduled for May 28.

The work-rule changes reduce the number of job classifications from more than 60 to four and give workers more responsibility to maintain and improve quality.

A joint-training committee composed of hourly and salaried employees worked on the changes for 12 months, a GM spokesman said.

Garcia said the state of California gave GM $20 million to retrain about 4,800 hourly and salaried workers for team production at Van Nuys.

He said that team production here is patterned after the system at New United Motor Manufacturing Inc., the GM-Toyota joint venture in Fremont, Calif.

GM has recalled the second shift at the Van Nuys plant, as it had pledged to do if the team-concept contract was approved.

Stamping plant for Mazda due in Michigan

By Louise Kertesz
AUTOMOTIVE NEWS STAFF REPORTER

Mazda Motor Corp., of Hiroshima, Japan, is forming a joint venture with three Japanese suppliers to build a stamping plant in southeastern Michigan. The facility will serve Mazda's new auto assembly plant in Flat Rock, Mich.

The assembly plant, operated by Mazda Motor Manufacturing (USA) Corp., is scheduled to begin production this fall.

The stamping plant will supply a broad range of small stampings in late 1989, a Mazda Motor Manufacturing spokesman said. The initial supply of small parts such as body-side pillars and cross members will come from Japan.

Mazda altered its original plans to import small stampings from Japan because of the yen's appreciation, the spokesman said.

The three suppliers entering into the joint venture with Mazda are Yamamoto Kozai, Ondo Kosakusho and Miura Kogyo. Mazda owns 33 percent of Miura. Those firms already supply Mazda in Japan.

When full capacity is reached at the Flat Rock assembly plant, it will produce 240,000 cars a year. The volume will be split between Mazda and Ford Motor Co.

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GMC, Chevy to combine marketing

GMC takes reins on medium trucks

By Joseph Bohn
AUTOMOTIVE NEWS STAFF REPORTER

General Motors in an unprecedented move is streamlining its medium-duty truck operations by having GMC Truck Division take over all the sales and marketing responsibilities of those vehicles for Chevrolet.

Specifically, GMC will handle the marketing, sales promotion, advertising, service and warranty, sales and service training, dealership contacts, order processing, truck distribution, fleet sales and used-truck programs, dealer leasing and financing programs and dealer organization and planning activities for both Chevrolet's and its own medium-duty models.

As part of the reorganization, McCann-Erickson, GMC's advertising agency, reportedly will also assume the medium-duty ad account previously handled by Chevrolet's Campbell-Ewald agency.

The moves affect 966 Chevrolet and 660 GMC medium-duty truck dealers and are being phased in over the next month.

see GMC, page 50

Donald Hudler, Saturn vice president, details distribution plans

AUTOMOTIVE NEWS/JOE WILSEMS

Saturn details dealer plans

100 by 1990 intro; pact gives retailers strong voice

By Michelle Krebs
AUTOMOTIVE NEWS STAFF REPORTER

TROY, Mich. — General Motors' Saturn Corp. will select a limited number of dealers for each geographic territory, and those dealers will be allowed to have multiple locations, including sites in shopping centers and office complexes.

Saturn President Richard LeFauve said the division will have 100 dealers in 30 major markets when the Saturn car is launched in 1990. The initial markets will be primarily on the East and West coasts and major cities in between, including Houston, Dallas, Chicago, Detroit and Atlanta.

Saturn will add dealers as production at the Spring Hill, Tenn., assembly plant increases. A second shift will be added at the end of the first six months of production. The plant will be able to produce 250,000 units a year. Two-door and four-door models are planned.

At the end of the first six months of production, Saturn is expected to have 200

see SATURN, page 47

Toyota plans new division, upscale cars

By Jesse Snyder
AUTOMOTIVE NEWS STAFF REPORTER
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LOS ANGELES — Toyota Motor Sales will announce later this year a second, upscale U.S. car-sales division. It will be similar to American Honda's Acura line, though there will be differences.

Toyota has already identified 100 key Toyota dealers who will get first shot at the unnamed new franchise. It will open the 1989 model year with three luxury-performance car lines, said sources within the industry and Toyota. Formal announcement could come as early as this summer.

Like Acura, Toyota will establish a separate marketing and advertising entity, staff the new division from within, introduce larger, more powerful and more expensive products, and eventually set up about 250 to 300 new dealer franchises.

Unlike Acura, Toyota may drop requirements that new dealers establish separate facilities in favor of shared service and different showrooms because of widespread dealer concern over costs.

Nissan Motor Corp. in U.S.A., which has been studying a similar move for years, is considered likely to follow quickly, although some sources believe Nissan does not need a second distribution channel yet and is less financially prepared than Toyota and Honda.

"Every company in the industry periodically looks at its distribution network to see what efficiency improvements it can make," a Nissan spokesman said. "No decision has been made yet. Whatever we do, we already have a good dealer network. We wouldn't want to undercut that."

Nissan Motor Co. is planning to market a low-volume car jointly developed and produced by Zagato S.p.A. of Milan, Italy, and Autech Japan, a Nissan subsidiary. The car is expected to sell for more than $70,000; annual production will be less than 100 units.

At least one, and possibly two, of the new Toyota division's models will be equipped with V-8 engines under development by Toyota. The division, with prices likely to start about $15,000 to $17,000 and go to the high-$20,000 range, will be positioned slightly above Acura but aimed more at European and American luxury cars.

Toyota's second channel is unlikely to slow Acura's progress toward an announced sales goal of 250,000

see TOYOTA, page 49

PART WARS

U.S. automakers blast gains by aftermarket sheet metal

By Arthur Flax
AUTOMOTIVE NEWS STAFF REPORTER

"Parts is parts" says the character in a recent fast-food television commercial. But when it comes to the sheet metal body parts used to repair wrecked autos, auto manufacturers claim theirs are better than those manufactured by independents overseas.

Distributors of the aftermarket sheet metal counter that the auto manufacturers are complaining only because low-priced aftermarket parts are cutting into a lucrative OEM monopoly.

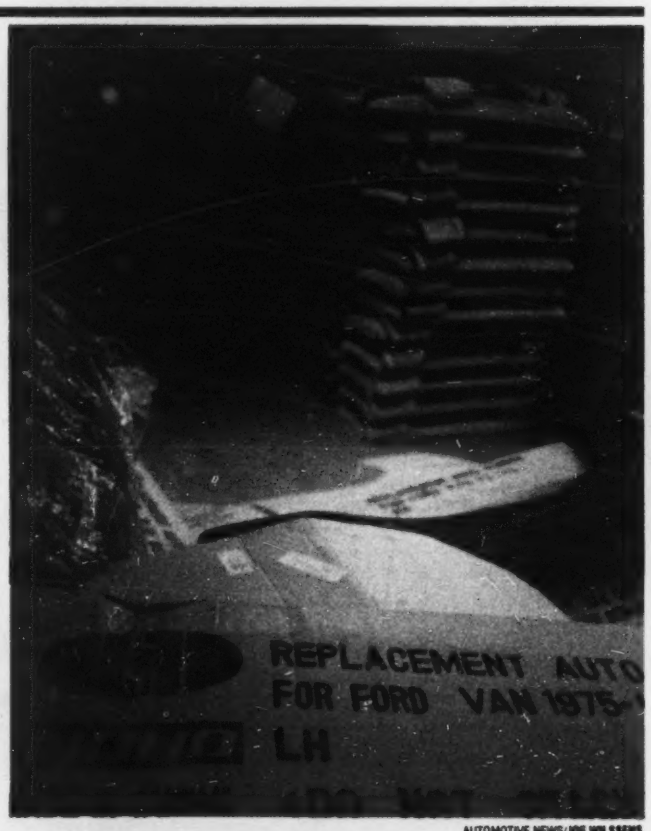
The sheet metal aftermarket has grown from virtually nothing to five percent of the crash-parts industry in three years.

Auto manufacturers claim its rapid ascent is the result of unfair pressure from insurance companies demanding that body shops use cheaper, inferior, "imitation" crash parts.

Insurance companies, on the other hand, claim the lower priced aftermarket sheet metal has forced automakers to cut their prices on crash parts as much as 60 percent.

At the heart of the controversy is one question: Are OEMs trying to maintain a monopoly in this lucrative segment, or do they have a legitimate beef against the pricing and quality of the newcomers?

The OEMs say they cannot compete with low costs due to shoddy production techniques used by aftermarket manufacturers — mostly based in Taiwan,



AUTOMOTIVE NEWS/JOE WILSEMS

ck handler stacks replacement fenders that were stamped in Taiwan

GM, dealers try regional rebate

By Laura Clark
AUTOMOTIVE NEWS STAFF REPORTER

In a 10-week pilot program, selected owners of General Motors cars and light trucks in four market areas are receiving cash rebates of $200 to $1,500 in addition to other incentives if they purchase a 1987 or 1988 GM car or truck.

GM is evaluating the program for a national rollout if it is successful. GM said it wants to determine how consumers respond to a direct-mail incentive program.

Although some dealers speculated that the new program might be the basis for a cleanup incentive on the 1987 models, a GM spokesman replied "absolutely not" when asked if that were the case.

GM also has extended all other incentive programs — both rebates and low-interest loans — until June

see REBATE, page 47

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Hail and farewell at Ford Design

Kopka details a 'golden era' after 3 decades of evolution

By David Versical
AUTOMOTIVE NEWS STAFF REPORTER

While Donald F. Kopka views the 1980s as the launch of a golden era of automobile design, the last three decades have marked an evolution he's glad he witnessed.

The 60-year-old vice president steps down from his job as head of Ford Motor Co.'s Design Staff today. And though the automaker and its designers are riding a crest of success, Kopka says he'd rather be ending his career now than starting it.

"The era that I came through was probably the most exciting," says Kopka, who began his career as a styling trainee with Chrysler in 1950 and joined Ford in 1964. "There was so much change. It was kind of wild and fun in the old days, and I wouldn't have traded that for anything."

He concedes that the U.S. auto industry created some abominations in the name of styling during the era of chrome and tail fins, but it turned out some gems too. In Ford's case, he points to the 1949 Ford and the first Thunderbirds and Mustangs of the following decades.

The 1970s, in comparison, were hostile to design, he says. The art of shaping a car was sacrificed to the demands of fuel economy, emission controls and crash regulation. But the period also paved the way for Ford's current prosperity when the automaker first began using wind tunnels to improve fuel efficiency, Kopka says.

Ford's aerodynamic design had its roots in the demands for a car that would meet less resistance as it cut through the wind. And in Kopka's view, further refinements of that shape will lead to landmark changes in the way cars are built.

"I've called it a gold mine, and the fact is, we've hardly gotten into the thing," he says. "For the next 15 to 20 years, there's going to be gold mined through the application of aerodynamics."

He ticks off some other advantages: Aerodynamics will virtually eliminate noise. Cars will hold the road better when angled toward the ground. Even glass will stay cleaner.

With the changes will come some new ways of building cars. Radiators will be moved to the rear so

see KOPKA, page 50

Telnack, apostle of aero look, pledges more styling advances

By David Versical
AUTOMOTIVE NEWS STAFF REPORTER

Jack Telnack, the designer credited with bringing the aerodynamic look to Ford Motor Co. cars, promises that the company will be nudging conventional thinking about design for years to come.

The 49-year-old Telnack takes over as head of Ford's worldwide design staff today (June 1). As chief design executive for Ford's North American Design Department since 1980, Telnack has his signature on such models as the 1983 Thunderbird and the Ford Taurus and Mercury Sable — cars that have played a big role in reviving Ford's image and its fortunes.

His new job "will be a continuation and expansion of what I've done in North America," said Telnack, who replaces the retiring Donald F. Kopka. "My main role and mission has been to build a design environment that will allow our design teams to express themselves creatively. That is my whole reason for being — I must stimulate the creative spirit throughout the entire organization."

Such ambitions for a design chief are a far cry from Telnack's earlier days at Ford, which he joined in 1958. "I was turning into a vegetable," he said, recalling the era when designers were known for decorating with chrome. Telnack moonlighted as a boat designer to keep himself challenged.

Now design has been elevated to new heights at Ford, and Telnack is relishing the chance to stay in the limelight at a new peak in his career.

He will be overseeing the work of Ford's 1,000 design employees in eight centers worldwide, in England, West Germany, Italy, Japan, Australia, Brazil and two centers in the United States.

He, Chairman Donald Petersen, President Harold Poling and Vice Chairman William Clay Ford put their stamp of approval on designs as they make their way toward production. Although Ford management is considered unusually receptive to innovation, Telnack's job will be to condition their thinking and make sure that new ideas get a fair shake.

Telnack also plans on being a catalyst to increase the flow of ideas between design centers. As the company and the industry become more global, Ford can profit from "cross-pollinating" concepts and design-

see TELNACK, page 50

Italian design house IDEA eyes U.S. site

By Richard Johnson
AUTOMOTIVE NEWS STAFF REPORTER

TURIN, Italy — IDEA, Italy's rapidly growing design and engineering house, may establish a branch and possibly a production facility in the United States before the end of the decade.

Unlike two of its main Turinese competitors, Bertone and Pininfarina, nine-year-old IDEA (Institute for Development in Automotive Engineering) is not currently a specialist producer.

But coachbuilding may be in the company's future. President Franco Mantegazza said IDEA had studied the possibility of acquiring two different Italian body builders, though ultimately it rejected both.

He said the company also has been encouraged by an unnamed American client to set up a factory in the United States. "I'm more interested in building up a facility to produce cars in the States than in Italy for a lot of simple reasons," said Mantegazza. He cited higher taxes in Italy and more difficult relations with Italian labor unions.

The relatively unknown IDEA has been instrumental in styling Fiat's upcoming Type 2/3 replacements for the Ritmo hatchback and Regata sedan, and has been heavily involved in other future Fiat and Alfa Romeo products. With Fiat and Alfa Romeo now joined, the majority of IDEA's business is with the Fiat group.

Though none of IDEA's styling creations are yet on the road, it is expected to have nine of its designs in the market by 1990, including six Fiat models and three Alfa Romeos. The company has also styled the Ferrari 408 4x4, a concept car which Ferrari has said is not scheduled for production.

IDEA officials say entering the coachbuilding realm will not be a high priority for the next two years. "We have enough trouble to keep pace with a company growing 40-50 percent a year than to add the other big problem of forming a manufacturing capability," said Marzio Raveggi, head of business development. "I think we should stabilize a little bit."

"I am still fishing around for the right solution," Mantegazza added.

Of the two Italian bodybuilders IDEA considered buying, Mantegazza said he was skeptical about the organizational strength of one and said the other was rejected because of limited manufacturing capacity.

"It was too small and too big at the same time," he said. "The maximum you could make was 2,000 bodies per year and it is not enough. But it is too big to begin slowly and to develop."

Mantegazza, whose family is sole owner of IDEA, said he halted earlier consideration of a U.S. production facility after it no longer fit the needs of the client that suggested it. Furthermore, he said IDEA was not sure whether to buy an existing company or build up a new operation.

IDEA is also interested in forming an operating arm in the United States "if business will pick up," Raveggi said.

Neither Pininfarina nor Bertone has styling or engineering centers in the United States, preferring to remain based in Turin.

On the advice of "some of my American friends," Mantegazza said he considered locating an IDEA branch in California. Several automakers have established styling studios in southern California, site of most key American design schools. But Mantegazza is now convinced that such an operation should be in Detroit.

The company is looking to boost its American business substantially in the very near future. It currently has a three-person sales office in Warren, Mich., that serves as a liaison with IDEA's Detroit clients, including General Motor's Buick-Oldsmobile-Cadillac and Chevrolet-Pontiac groups, Fisher Body and Chrysler Motors .

"We are now speaking about new products with General Motors but we have to wait for an answer from Detroit," Mantegazza said. He declined to elaborate on the pending deal.

Beyond styling, IDEA's range of services include body and chassis engineering, manufacturing engineering (including die design and alternative materials activity), computer-aided design, electronics applications, and model and prototype construction.

IDEA would like to increase its North American revenues to 10-12 billion lire ($7-9 million) by 1989-90, thereby reducing dependence on Italian revenues to 30-35 percent of the total.

With a workforce of 190, IDEA's sales revenue in 1986 totaled over $12 million, up from about $7 million the year earlier. The company expects sales of more than $18 million in 1987.

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61st year—No. 5183

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Six import execs to address World Congress

So far this year, imports have accounted for more than 28 percent of the U.S. new-car market.

Imports will also get their share of attention at the 12th annual Automotive News World Congress, to be held July 26-29 at the Hyatt Regency in Dearborn, Mich.

This year's overall Congress theme is "Facing Up to Competitive Times."

Six speakers with import ties are scheduled to appear on this year's program: Robert J. Sinclair, president, Saab-Scania of America Inc.; Norman Braman, chairman, Austin Rover Cars of North America; William Prior, president, Global Motors Inc.; John E. Reilly, senior vice president, American Isuzu Motors Inc.; Charles Hughes, president, Range Rover of North America Inc.; and Michael Kimberley, managing director and chief executive officer, Group Lotus.

Sinclair, who is also board chairman of Saab-Scania of Canada Inc., will speak at the Tuesday Evening Gala dinner on July 28.

Prior, Reilly and Kimberley will be general session speakers on Tuesday morning, when the day's theme will be the "Impact of a Global Perspective."

In addition to his responsibilities as president of Global Motors, Prior is president of its subsidiaries Yugo America Inc. and Proton America, which plans to import the Malaysian-built Proton Saga early next year.

On Monday, July 27, when the day's theme will be "Recoveries and Strategies for the Domestic Industry," Braman will address a General Session on the topic, "Bringing a New Car to Market." Hughes, whose Range Rover also is new to U.S. shores, will speak at an afternoon workshop, focusing on "How Specialty Vehicles Fit in the U.S. Market."

Braman's company is importer-distributor of the Sterling, a British luxury sedan.

In all, the Congress will have more than 30 speakers, sharing their knowledge and viewpoints on where the auto industry stands today and where it is headed.

For further information, write: Automotive News World Congress, 1400 Woodbridge Ave., Detroit, MI 48207, or call (313) 446-6047. Overseas inquiries cable: 810-221-5122 AUTNEW.

GM narrows CAD/CAM candidates

By Jake Haas
SPECIAL CORRESPONDENT

General Motors is attempting to consolidate its computer aided design/computer aided manufacturing (CAD/CAM) hardware base by standardizing its design systems around three "strategic partners."

GM is in final negotiations with the five finalists of a 27-company field. To select the partners, GM and its Electronic Data Systems subsidiary have written a 400-page specification detailing the automaker's CAD/CAM requirements. Despite its length, the document is considered an excellent and realistic detailing for a large integrated CAD/CAM system.

GM-EDS and the finalists are mum on the final talks, except for a comment by an EDS spokesman that two more firms will be eliminated.

The five finalists are Cadam Inc., a subsidiary of French aircraft builder Dassault based in Burbank, Calif.; Catia, Los Angeles; Computervision Corp., Bedford, Mass.; Intergraph Corp., Huntsville, Ala.; and McDonnell Douglas Corp., St. Louis. IBM is involved indirectly: It distributes both Cadam and Catia software for its computer products.

GM already has one of the largest and most sophisticated CAD systems in the world with approximately 22,000 workstations. A CAD system of GM's own design accounts for about 35 percent of the stations. However, products from a wide variety of other vendors, including the finalists, are scattered throughout the company.

GM is seeking compatibility and integration of those diverse systems and its home-grown system. The CAD/CAM systems are also expected to be compatible with GM's manufacturing automation protocol/technical-office protocol (MAP/TOP) plant/office networks as the automaker continues its automation drive toward computer integrated manufacturing based on company-wide database and engineering exchange.

$7 million HFX Ghia Aerostar

AUTOMOTIVE NEWS/JOE WILSSENS

An Aerostar for future

Concept vehicle loaded with electronics

By Joseph Bohn
AUTOMOTIVE NEWS STAFF REPORTER

DEARBORN, Mich. — Ford Motor Co. and 17 of its outside suppliers have created a $7 million concept vehicle, called the HFX Ghia Aerostar.

It is a test bed for determining the "feasibility and practicality" of a variety of new electronic safety, performance and comfort features for future light trucks.

Donald F. Kopka, who retires today (June 1) as vice president — Design, predicted that many of the concept vehicle's features will be "standard equipment in light trucks of the future," but he wouldn't hazard a guess as to which ones will show up when.

Charles A. White, chief engineer, Ford light-truck chassis engineering, said that "four-wheel steering bears watching and investigating, and Ford Motor Co. is working on that."

He also said that, with rear anti-lock brakes on 700,000 Ford trucks in the 1987 model year, "expansion to a four-wheel anti-lock brake system would, I think, be an easier thing to do than some of the things farther down the road, such as sonar."

The vehicle has a sonar system that alerts drivers to adjacent vehicles and is a help in parking.

The concept vehicle, a joint effort by the Ford Design Staff in Dearborn and its Ghia Studios in Italy, took 27 months to complete and incorporates 26 on-board computers monitoring various functions.

Its features include a "driver personality key" that automatically sets the driver's seating position and the positions of the mirror, brake and accelerator pedals and safety-belt shoulder strap when the driver inserts the key in the door lock.

The brake and accelerator pedals can be adjusted as much as four inches to accommodate shorter- or longer-legged drivers.

The Ghia Aerostar also has an air suspension system similar to that on the 1987 Lincoln Mark VII and Continental.

The vehicles' grille louvers react automatically to engine temperature. They're closed during cold starts and they open as the engine coolant heats, providing air flow.

Special inside and outside mirrors, with an electrochromic cell, adjust automatically to different light conditions to eliminate glare.

Liquid crystal technology allows the driver to adjust the rear and side windows from clear to dark for privacy.

The vehicle also has four-wheel disc anti-skid brakes, a sonar system and "run-flat" tires and wheels.

Other features include a liquid crystal diode liftgate message display with pushbutton controls. A driver can run seven different messages, like "send help" and "do not pass" across the back of the tailgate.

Ford officials said they plan to display the vehicle at an auto show in Chicago and also at the show in Frankfurt, West Germany.

Top officials at AMC to get year's pay if not hired by Chrysler

By Laura Clark
AUTOMOTIVE NEWS STAFF REPORTER

American Motors' top 125 executives will be guaranteed one year's salary if they are not hired by Chrysler Corp. after Chrysler acquires AMC.

Other AMC salaried employees set adrift by the merger will receive separation packages ranging from several months' pay to one year's salary, depending on length of service, according to an AMC spokesman.

AMC would not disclose the formula it will use to compensate those employees.

No employee will receive more than one year's salary under AMC's Salaried Retention Program, eliminating any "golden parachutes" for high-ranking AMC executives not retained by Chrysler, according to an AMC spokesman.

Golden parachutes are multifaceted separation packages that provide salaries, benefits and even bonuses for several years. They are common in mergers.

All 5,700 AMC salaried employees will receive information packets this week detailing what options are available to them if they are not offered jobs at Chrysler. An AMC source said the packets will detail the dollar compensation, based on length of service, that all salaried employees not retained by Chrysler will receive.

According to an AMC spokesman, the automaker's 1986 payroll for salaried employees totaled $231.5 million and the payroll for all employees was $610 million. AMC had 5,715 salaried employees and 15,765 hourly employees as of April.

At a meeting of AMC's 125 bonus roll employees last Wednesday, Chrysler Motors Chairman Gerald Greenwald said the impending Chrysler buyout of AMC is a "merger, not a dismantling" of the company. The meeting was held at a New Hudson, Mich., conference center and was closed to the press.

One attendee, who wished to remain anonymous, said Greenwald took a very "humanistic" approach to the AMC employees' feelings about the impending merger and "helped to put everything (about the merger) into perspective." Greenwald, according to the source, discussed what events typically take place in a merger, but did not detail how many AMC employees would be retained by Chrysler.

The AMC acquisition comes as Chrysler is trimming its own white-collar workforce through attrition. Chrysler said it plans to institute a white-collar hiring freeze, limit merit pay for its top 1,800 executives and cut overtime pay for 5,200 salaried employees.

Those steps are part of a plan to slash Chrysler's expenses by $500 million by the end of 1987.

Those attending Wednesday's AMC bonus-roll meeting were told that employment opportunities at Chrysler would not be discussed until after the merger is consummated — or in about 90 days. Chrysler said it would like to complete the $1.5 billion buyout by Aug. 15.

No outplacement firms have been hired by AMC to locate new jobs for employees not retained by Chrysler, according to the AMC spokesman. However, AMC has hired R.E. Harrington Inc., Columbus, Ohio, to handle its unemployment compensation accounts with state agencies. The firm oversees the company's unemployment compensation account with individual states to be sure claims are handled correctly.

Robert Parker, Harrington president said compensation packages received under a merger situation may delay the payment of unemployment benefits to a non-retained employee. He added that the domestic automakers have adequate unemployment funding with the states to cover large layoffs or terminations when needed.

Study says import breakdowns top domestics

By Charles M. Thomas
AUTOMOTIVE NEWS STAFF REPORTER

A researcher says European and Japanese cars are breaking down on New York-New Jersey highways at a rate nearly 50 percent higher than domestic makes.

Amar Dev Amar, associate professor of management and industrial relations at Seton Hall University in South Orange, N.J., said his study of comparative breakdown rates by make "indicates that certain makes had much higher rates of highway breakdowns than others." An independent analysis of Amar's data conducted by Automotive News supports those findings.

Comparing all makes of cars — domestic and foreign — Audi, Volkswagen and Nissan topped the list for highway breakdowns, according to Amar. Renault, Ford and Toyota were next.

Amar's study, which searched New York and New Jersey highways for vehicle breakdowns in 1985 and 1986, found Audi breakdowns five times as often per 100,000 vehicles registered in those states as the rate for Mazda and Subaru.

Imports did not fare well in the overall study. On the average, Japanese cars had a breakdown rate 25 percent higher than that of domestic vehicles. European cars broke down 30 percent more often than Japanese cars and nearly 70 percent more often than domestic cars.

Oldsmobile had the lowest breakdown ratio of all vehicles in the survey — 4.7287 per 100,000 registrations — and was used as the index by which comparisons with other vehicles were made. (Mazda showed a slightly lower rate of breakdowns than Oldsmobile, and Subaru showed the same rate, but they were not used as the standard because of their low penetration in the marketplace.)

According to the study, when compared to Oldsmobile, Honda had a 48 percent greater likelihood of breaking down; Mercedes-Benz, 56 percent; and Fiat, 90 percent.

In the domestic-car sampling, Ford fared the worst with a 119 percent greater likelihood of a breakdown than Oldsmobile. Cadillac followed at 97 percent, Pontiac at 94 percent and Lincoln at 86 percent.

Buick was less likely to break down than either Plymouth or AMC. And in the luxury class, both BMW and Mercedes were less likely to break down than Cadillac.

Amar said he undertook the study because the probability of a highway breakdown should be a consideration when consumers buy a new car. He said the survey was not financed by any outside organization. Data was gathered by Seton Hall University personnel.

Researchers collected data on 953 highway breakdowns of passenger cars on New York and New Jersey highways during 11 months from the summer of 1985 to the spring of 1986.

The study consists of 33 domestic and foreign makes of cars and more than 100 car models.

Findings are based on a comparative study of make, model and country of origin for passenger cars discovered disabled on the highway by the data collectors. Breakdowns caused by flat tires or running out of gas were not included.

Amar calculated the number of breakdowns for a specific make of car against the number of registered vehicles of that make in New Jersey and New York, then converted the number to a ratio per 100,000 registered vehicles.

The study does not measure or compare vehicle maintenance, age of the vehicles, mileage, or engine and component wear.

Amar said his findings should be relevant nationally because the New York-New Jersey area has a car population 79.4 percent domestic and 20.6 percent foreign, compared with a similar nationwide population of 78.8 percent domestic and 21.2 percent foreign.

The American Automobile Association in Washington said it was not aware of any similar studies. But Amar said he plans another identical study this summer.

HIGHWAY BREAKDOWN INDEX

	SAMPLE SIZE	INDEX
Audi	15	5.42
Volkswagen	59	3.99
Nissan/Datsun	67	3.35
Renault	3	2.96
Ford	137	2.19
Toyota	49	2.16
Cadillac	89	1.97
Pontiac	71	1.94
Fiat	8	1.90
Lincoln	11	1.86
Chevrolet	189	1.79
Dodge	47	1.76
Mercedes	7	1.58
Mercury	30	1.53
Honda	20	1.48
Chrysler	19	1.48
AMC	16	1.40
Plymouth	38	1.39
Buick	57	1.38
BMW	3	1.15
Volvo	5	1.09
Plymouth Imports	2	1.04
Oldsmobile	45	1.00
Subaru	5	1.00
Mazda	4	0.98

SOURCE: A.D. Amar, Seton Hall University

All-leather trail blazer
Concepts Automotive, Mishawaka, Ind., has introduced a Custom Leather Edition of the Chevrolet S-10 Blazer, a package also available on the GMC S-15 Jimmy. For a dealer cost of $2,800, the package features full-leather front and rear seats; leather door inserts and rear-quarter trim panels; leather-wrapped steering wheel; and special wheels, tires and paint design.

Van Masters' new mini conversion package
Van Masters, Columbus, Ohio, offers its new Star Van luxury conversion on Dodge, Chevrolet and Ford minivans. The conversion features an American Sunroof Corp. electric, retracting and venting sunroof; compact disc player; and lower body molding. Van Masters, a consignment pool company, said it can finish a Star Van within 10 days of receiving the raw unit from a manufacturer.

New Vixen model
Vixen Motor Co., Pontiac, Mich., has introduced a 1988 Vixen XC model. The new vehicle, although sharing the aerodynamic outward design and engineering components of the Vixen 21, is more of a "grand touring" vehicle. It does not have cooking or shower facilities and, although it can be slept in, the internal design is geared toward executive and salesperson-type transportation and tailgate-party use. The new model, with a manufacturer's suggested retail price of $34,990, is designed to compete more in the luxury van conversion market than the motor home market.

Cozy Craft revamps van line
Cozy Craft Vans, a division of Travelcraft Industries, Elkhart, Ind., redesigned the interiors of its All Star and Tourist van conversions with touches like plush highback recliner-swivel chairs, a rear overhead console and oak decoration. It also has a new Elegante model, featuring six-way power driver's seat, Euro-style highback recliner-swivel chairs and designer door panels.

RV shipments increase 11%

By Joseph Bohn
AUTOMOTIVE NEWS STAFF REPORTER

Wholesale shipments of recreational vehicles climbed 11.1 percent in March, continuing a steady, strengthening trend.

March shipments totaled 39,100, up from 35,200 in the year-earlier period, according to the Recreation Vehicle Industry Association.

First-quarter shipments of 102,200 were up 4.0 percent from 98,300 last year, according to the RVIA.

Customized van shipments are beginning to rebound. Shipments of 17,700 in March were up 4.1 percent from 17,000 in the same period of 1986.

For the first three months of this year, customized van shipments totalled 46,400, off 4.1 percent from 48,400 in the same period last year.

Ford dealers have stocked a record number of customized vans for the retail market, reflecting their optimistic outlook, according to Dave Tarrant, Ford Division RV/OEM sales manager.

Wholesale shipments of other RVs also were up in March.

Truck camper shipments totaled 1,200 in March and were particularly strong, showing a 71.4 percent increase. Their three-month tally of 2,500 was up 56.3 percent from a year earlier.

Similarly, van camper shipments totaled 500 in March and were up 66.7 percent from a year earlier. Their three-month total of 1,600 was up 23.1 percent from a year ago.

Meanwhile, industry suppliers, such as ITT Commercial Finance Corp., of Clayton, Mo., see a strong market for the balance of the decade. ITT Commercial, one of the larger companies specializing in RV dealer floorplanning, monitors retail and wholesale liquidation and volume.

The company cited such positive factors as tax reform, which is expected to create more discretionary income; baby boomers entering the prime RV-buying years; stable or declining RV manufacturing costs, which are expected to hold down new-vehicle prices; and increased acceptance of the RV lifestyle.

ITT considers RV dealers and manufacturers to be generally prudent and financially sound. The RV industry accounts for about 10 percent of its total commercial lending.

Recreational Vehicle Wholesale Deliveries

	March 1987	March 1986	% change	3 months 1987	3 months 1986	% change
Travel trailers	9,200	8,400	+ 9.5	24,900	22,800	+ 9.2
Folding camping trailers	4,400	3,900	+12.8	10,400	9,900	+ 5.1
Truck campers	1,200	700	+71.4	2,500	1,600	+56.3
Towable RV total	14,800	13,000	+13.9	37,800	34,300	+10.2
Conventional (type A)	3,500	2,700	+29.6	9,600	8,100	+18.5
Van Campers (type B)	500	300	+66.7	1,600	1,300	+23.1
Chopped vans (all)	2,600	2,200	+18.2	6,800	6,200	+ 9.7
Motor home total	6,600	5,200	+26.9	18,000	15,600	+15.4
Van conversions	17,700	17,000	+ 4.1	46,500	48,400	- 4.1
TOTAL ALL RVs	39,100	35,200	+11.1	102,200	98,300	+ 4.0

Source: Recreation Vehicle Industry Association

RVIA schedules space drawings

RESTON, Va. — The Recreation Vehicle Industry Association has set exhibitor space drawing dates for its two biggest shows and also has scheduled meetings to discuss new manufacturing standards.

The drawing for exhibit space at the RVIA's 1987 National RV Trade Show in Louisville, Ky., will be held June 30 at its headquarters here.

Manufacturer space assignments will be made through a lottery system, starting at 9:30 a.m., according to Steve Krivian, director of corporate marketing services for Thor Industries, Jackson Center, Ohio, and chairman of RVIA's 1987 Louisville Show Committee.

The first draw will go to RVIA members with six years' seniority as participants in the show, the second draw to all other RVIA members and the third to non-member exhibitors.

Due to heavy demand, space will be allocated to manufacturers.

Each manufacturer's allocation will be based upon the amount of its contribution to the total revenue RVIA received in fiscal 1986 for membership dues and on the purchase of seals and manufacturer certificates of origin which RVIA sells.

Non-RVIA members and new members are limited to 1,000 net square feet of space under the allocation system.

Supplier space assignments will be made immediately after all manufacturer space is assigned, using the established seniority system combined with the lottery system.

RVIA's National RV Show, now in its 25th year, is expected to draw more than 12,000 RV dealers and other industry officials to the Kentucky Fair and Exposition Center in Louisville, Dec. 1-4.

Meanwhile, drawings for supplier and manufacturer exhibit space at the RVIA's 35th annual RVIA Recreation Vehicle Show in Los Angeles will be held July 29 and 30, respectively.

Both drawings will be held at RVIA's Western region office in Orange, Calif., beginning at 9 a.m. each day, according to Bob Lee, president of Country Coach Inc., Junction City, Ore., and chairman of the Los Angeles show committee.

As for the Louisville show, supplier and manufacturer space assignments will be made through a lottery system, with RVIA members with six years' seniority as show participants getting the first draw, other RVIA members the second and non-member exhibitors the third.

Suppliers and manufacturers who plan to exhibit in the show must send a completed application and 50 percent deposit to RVIA's Western region office by July 23 to be included in the space assignments on July 29-30.

Firms whose applications with deposits are received after that date will be assigned space after all other requests for space have been filled.

Meanwhile, the RVIA will hold a series of meetings in Indiana and California in June to discuss forthcoming changes in the American National Standards Institute's 1987 edition of the National Standard for Recreational Vehicles and the 1987 National Electrical Code.

In both Indiana and California, the association has scheduled a one-day standards seminar, followed by a general membership meeting, reception and dinner, according to RVIA chairman Don Cuzzocrea, president of Starcraft, a Lear Siegler Co. in Topeka, Ind.

The Indiana meetings will be held June 16, beginning with a standards seminar in South Bend and a later general membership meeting and reception in Elkhart.

The California meetings will be held June 18 in Anaheim.

NEW LOOK: *Dealer 'professionalism' to be stressed at RVDA convention in New Orleans*

FAIRFAX, Va. — In an era of tough selling and scarce service personnel, the Recreation Vehicle Dealers Association is planning a "new look" at its convention and exposition.

The event will be staged Sept. 27 to Oct. 1 in New Orleans.

The event's theme, "A new look in New Orleans," is designed to emphasize the growing professionalism of dealers in accommodating customers in what has become a $12 billion industry.

For the first time, RVDA will provide a showcase for manufacturers and distributors of products (other than rolling stock) that are required to operate an RV dealership professionally.

Jerry Harrison, RVDA show chairman, said the event is planned to assist not only dealer owners, but second-level management as well, including sales, service and parts managers.

Two educational sessions and a new exposition will emphasize merchandising and marketing of RV parts, accessories and service.

Nearly 1,000 aftermarket dealers not previously included in RVDA conventions are being invited to attend the New Orleans meeting.

The exhibition, which includes rolling stock, will give exclusive attention to parts and accessories, office systems and shop tools and equipment.